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## PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)

CHUAH 35

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on January 17, 2006Signature [Signature]Typed or printed name John Higon

Application Number

09/349,571

Filed

07/08/1999

First Named Inventor

CHUAH

Art Unit

2666

Examiner

DANG T.  
TON

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor.☐ assignee of record of the entire interest.  
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.  
(Form PTO/SB/96)☒ attorney or agent of record. 35,938  
Registration number☐ attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34 \_\_\_\_\_

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January 17, 2006  
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below\*.

☐ \*Total of \_\_\_\_\_ forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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**Form PTO/SB/33 Supporting Reasons**  
**Application S/N 09/349,571**

Two of the pending independent claims (claims 1 and 6) and all claims depending therefrom stand rejected as being unpatentable over Applicants description of the art in view of Pejihan *et al.* (Error Control Using Retransmission Schemes In Multicast Transport Protocols For Real Time Media, 1996, IEEE). The remaining independent claims (claims 4, 9 and 12) and all claims depending therefrom stand rejected as being unpatentable over Applicants description of the art and Pejihan, in view of Miller *et al.* (U.S. Patent No. 5,727,002). Applicant respectfully submits that the cited art does not teach or suggest one or more distinguishing features of the invention which appear as limitations in each of the independent claims.

The invention is directed to error recovery in a Layer 2 Tunneling Protocol (L2TP) channel, and specifically provides a new process for a sender-initiated data recovery process. As taught by the Applicant, L2TP maintains, at a receiving peer, a sequence variable, Sr, representing the expected sequence value of the next packet sent from a sending peer. Upon receipt at the receiving peer of a packet having a sequence indicia corresponding to the expected, or Sr, sequence value, the value of the Sr variable is incremented by 1. Correspondingly, the occurrence of the received-packet sequence indicia being greater than the expected (Sr) value -- *i.e.*, the case of the correct packet in the sequence not having been received by the receiver (lost packet), will result in the Sr value remaining unchanged.

With L2TP, the current value of the Sr variable is also sent from the receiving peer back to the sending peer in a packet being sent from the receiver to the sender. Accordingly, the receipt by the sending peer of an Sr value that does not match the sent-packet sequence

provides an indication of a lost packet. This indication is referred to as a negative acknowledgment.

According to the invention, a new variable, *multiple-negative-acknowledgments*, is defined and maintained at the sending peer, along with a means for maintaining a count of the number of such negative acknowledgments received. After a predefined number of such negative acknowledgments are received -- *i.e.*, a counted value equal to that predefined number, a recovery process is initiated by the sending peer.

While, as Applicant described in her application, a sender-initiated recovery algorithm is known in the art for L2TP, that prior-art mythology only operates to initiate a recovery process upon the expiration of a time-out interval, as determined by timing mechanism maintained at the sending peer, prior to receipt of a positive acknowledgment from the receiving peer. Applicant believes that this prior-art timing-mechanism for initiating a recovery process by the sending peer is clearly different from the sender-initiated recovery process described and claimed according to her invention, and does not read the Office Action to suggest otherwise. On the contrary, the Office Action cites the teaching of Pejihan as teaching an accumulation of a number of negative acknowledgments and posits that it would have been obvious to combine this feature of Pejihan with the general teaching of L2TP operation provided in the application to achieve the sender-initiated recovery process of the invention. Applicant respectfully submits that a fair reading of Pejihan does not support the construction supplied by the Office Action, and moreover that Pejihan does not represent analogous art that would be looked to by one skilled in the art for addressing the problem to which the invention is directed.

Initially, it is to be noted that the methodology taught by Pejihan is not even remotely related to a Layer 2 Tunneling Protocol communication system. Rather, the teaching of

Pejihan is directed to systems for multicasting a single information stream to multiple receiving clients, and for determining when and how often to provide retransmission of packets indicated to be lost based on negative acknowledgments received from individual ones of the receivers receiving the multicast transmission from the multicast sender. Moreover, the thrust of Pejihan is clearly directed to the use of either timing mechanisms or immediate retransmission upon receiving a negative acknowledgement for governing such packet retransmissions, thus effectively teaching away from the central idea of the invention.

In a single sentence addressed to a summary of other authors work, Pejihan states that the authors provide a “threshold based on the number of [receiving] hosts sending NACK’s [negative acknowledgements] for a given packet.” The Office Action relies on this minor extract from Pejihan as the basis for its conclusion that Pejihan teaches the limitation of Applicant’s invention whereby an L2TP sender initiated recovery process is initiated upon the detection of a predetermined number of sequential negative acknowledgements being received from a single receiver.

This is simply not a tenable construction of Pejihan. In the first place, there is insufficient detail provided by Pejihan of the other authors work to constitute an enabling disclosure, and therefore this teaching cannot properly be applied as a basis for a §103 rejection. Moreover, even on the limited information provided by Pejihan, it is clear that any accumulation of negative acknowledgements by the referenced methodology is directed to single NACKs received from multiple hosts of the multicast transmission. Plainly there is no analog there to the receipt and processing of multiple negative acknowledgements from a single receiver as a basis for determining a need for initiating a recovery process by the sender, as carried out by the invention.

Although the Applicant believes that the foregoing discussion, showing that the invention is not shown or suggested by a combination of the prior art described in the application and the teaching of Pejihan, is also dispositive of the claim rejections based on that combination and further in view of Miller, it is also clear that Miller cannot reasonably be construed to teach the limitations to which it is applied by the Office Action.

As a starting point, it is to be noted that, like Pejihan, the methodology taught by Miller is not even remotely related to a Layer 2 Tunneling Protocol communication system. And, like Pejihan, the teaching of Miller is directed to a system for multicasting a single information stream to multiple receiving clients. As part of its methodology, Miller sets up a procedure for determining frames of information which were either not received, or received in error by various of the receiving clients through negative acknowledgments sent back to the sending server by the clients. While an embodiment of Miller does contemplate the sending of multiple negative acknowledgments from particular clients, it is critical to note that this is simply an accumulation of negative acknowledgments at a client, with each one relating to a different packet error, and which accumulated negative acknowledgements are sent to the server at the same time as a matter of communication efficiency.

As noted above, the invention, in sharp contrast, is addressed to a single communications link between one server and one client, and more important, the sender-initiated recovery methodology of the invention contemplates sequential transmission from the client to the server of individual negative acknowledgments, each addressed to the same error - i.e., failure of the client to receive a particular packet sent by the server. That failure, as taught by the Specification, is manifested in the unchanging value of the Sr variable at the client as additional packets are sent from the server. Then, according to the method of the invention, upon receipt by the server of the same Sr value a predetermined number of times,

indicative of the client not having received the packet corresponding to that Sr value, the server initiates the recovery process.

In the Final Office Action, the Examiner seems to infer an acceptance of the feature of the invention of detecting a predetermined number of negative acknowledgements received from the receiving peer (and thereupon initiating a recovery process) as distinguishing over the art, but goes on to posit that this feature does not appear as a limitation of the claims. The Applicant respectfully submits that such is an unwarrantedly narrow reading of the claims. Independent claim 1, which is representative, includes the limitation “initiating a recovery process upon detection of a predetermined number of negative acknowledgements being received.” While the limitation does not explicitly recite a counter as a physical means for maintaining a count of the “predetermined number of negative acknowledgements” (as the Examiner notes), the function of maintaining such a count is clear from the limitation, and persons skilled in the art will certainly know that a counter is one means for so detecting that predetermined number. In addition, as it is clear that the feature of detecting the predetermined number of negative acknowledgements in the context of the other limitations of Applicant’s claims is not shown or suggested by the art of record, there is no basis for imposing a particular physical implementation of that function on the claim limitation as a basis for distinguishing over the art.

Each of Applicant’s remaining independent claims includes a limitation substantively comparable to the limitation discussed above for independent claim 1. Accordingly, Applicant submits that all of the independent claims should be found patentable over the art of record. The remaining rejected claims all depend, either directly or indirectly from one of those independent claims, and should also be patentable.